Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) An illumination optical system for illuminating an illumination area on an illumination surface based on a light from a light source, comprising:

a wavefront dividing type optical integrator which is arranged in an optical path between the light source and the illumination surface and forms a plurality of light source images; and

a light source image enlarging member which is arranged in an optical path between the light source and the optical integrator at or near a position optically conjugate with the illumination surface, the light source image enlarging member enlarging the light source images,

wherein the illumination area has a slot shape with a first dimension and a second dimension which is perpendicular to the first dimension, and

wherein the light source image enlarging member stretches the light source images along the first direction corresponding to the first dimension.

2. (New) The illumination optical system according to claim 1, wherein the light source image enlarging member stretches the light source images along a second direction corresponding to the second dimension, and wherein enlarging magnification along the second direction differs from enlarging magnification along the first direction.

3. (New) The illumination optical system according to claim 2, wherein the wavefront dividing type optical integrator has a plurality of lens surfaces.

4. (New) The illumination optical system according to claim 3, wherein the plurality of lens surfaces are arranged two-dimensionally, each forming the light source images,

wherein the light source enlarging member enlarges the light source images formed by the plurality of lens surfaces, and

wherein a beam diverging angle of the light source image enlarging member is set such that the enlarged light source images are smaller than the plurality of lens surfaces.

5. (New) The illumination optical system according to claim 1, wherein a beam divergent angle of the light source enlarging member is determined such that no loss in illumination light occurs in the optical integrator.

6. (New) The illumination optical system according to claim 5, wherein the wavefront dividing type optical integrator has a plurality of lens surfaces.

7. (New) The illumination optical system according to claim 6, wherein the light source enlarging member enlarges the light source images formed by the plurality of lens surfaces, and

wherein a beam diverging angle of the light source image enlarging member is set such that the enlarged light source images are smaller than the plurality of lens surfaces.

8. (New) The illumination optical system according to claim 7, wherein the light source image enlarging member stretches the light source images along a second direction corresponding to the second dimension, and wherein enlarging magnification along the second direction differs from enlarging magnification along the first direction.

9. (New) The illumination optical system according to claim 1, wherein the wavefront dividing type optical integrator has a plurality of aspherical lens surfaces.

10. (New) The illumination optical system according to claim 9, wherein the plurality of aspherical lens surfaces are arranged two-dimensionally.

11. (New) The illumination optical system according to claim 9, wherein the light source enlarging member enlarges the light source images formed by the plurality of lens surfaces, and

wherein a beam diverging angle of the light source image enlarging member is set such that the enlarged light source images are smaller than the plurality of lens surfaces along the first direction.

12. (New) The illumination optical system according to claim 11, wherein the light source image enlarging member stretches the light source image along a second direction corresponding to the second dimension, and wherein enlarging magnification along the second direction differs from enlarging magnification along the first direction.

13. (New) An exposure apparatus for transferring a pattern on a mask onto a photosensitive substrate, comprising:

a light source;

the illumination optical system according to claim 1, which is disposed in an optical path between the light source and the mask, and which illuminates the illumination surface on the mask; and

a projection optical system which is disposed in an optical path between the mask and the substrate, and which projects the pattern onto the photosensitive substrate,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.

14. (New) An exposure method for transferring a pattern on a mask onto a photosensitive substrate, comprising:

illuminating the illumination surface on the mask with the illumination optical system according to claim 1; and

projecting the pattern onto the photosensitive substrate with a projection optical system,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.

15. (New) An exposure apparatus for transferring a pattern on a mask onto a photosensitive substrate, comprising:

a light source;

the illumination optical system according to claim 2, which is disposed in an optical path between the light source and the mask, and which illuminates the illumination surface on the mask, and

a projection optical system which is disposed in an optical path between the mask and the substrate, and which projects the pattern onto the photosensitive substrate,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.

16. (New) An exposure method for transferring a pattern on a mask onto a photosensitive substrate, comprising:

illuminating the illumination surface on the mask with the illumination optical system according to claim 2; and

projecting the pattern onto the photosensitive substrate with a projection optical system,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.

17. (New) An exposure apparatus for transferring a pattern on a mask onto a photosensitive substrate, comprising:

a light source;

the illumination optical system according to claim 8, which is disposed in an optical path between the light source and the mask, and which illuminates the illumination surface on the mask; and

a projection optical system which is disposed in an optical path between the mask and the substrate, and which projects the pattern onto the photosensitive substrate,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.

18. (New) An exposure method for transferring a pattern on a mask onto a photosensitive substrate, comprising:

illuminating the illumination surface on the mask with the illumination optical system according to claim 8; and

a projecting the pattern onto the photosensitive substrate with a projection optical system,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.

19. (New) An exposure apparatus for transferring a pattern on a mask onto a photosensitive substrate, comprising:

a light source;

the illumination optical system according to claim 12, which is disposed in an optical path between the light source and the mask, and which illuminates the illumination surface on the mask; and

a projection optical system which is disposed in an optical path between the mask and the substrate, and which projects the pattern onto the photosensitive substrate,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.

20. (New) An exposure method for transferring a pattern on a mask onto a photosensitive substrate, comprising:

illuminating the illumination surface on the mask with the illumination optical system according to claim 12; and

projecting the pattern onto the photosensitive substrate with a projection optical system,

wherein the mask and the substrate are moved along a scanning direction relative to the projection optical system during exposing operation, and

wherein the scanning direction corresponds to the second dimension.